

SUMMER INTERNSHIPS 2017

TITLE: Micro- and Nanoscale Plasmonic Substrates for Nanoengineering Applications

DESCRIPTION (Objectives, tasks, materials, equipment,...):

Plasmonics requires metallic thin films with precise microstructure and excellent optical properties. Therefore, a large number of techniques are used to fabricate reproducible substrates. In particular, array-based substrates such as nanoholes, nanowells, nanopillars, and nanorods have proven their potential as plasmonic sensors.

In this project, we are aiming **to develop an array-based plasmonic surface for refractive index-based sensors**. The superior goal of the program is to implement a plasmonic system for the detection of exosomes using real samples. The students will work in the framework of the Nanoengineering Group of CIC nanoGUNE to carry out the following tasks:

- Design of plasmonic films and fabrication using lithography and coating technology
- Characterization of the surface as well as of the deposition process by AFM and SEM
- Measurements and evaluation of different parameters with the SPR (surface plasmon resonance) custom-made system

SUPERVISOR: Dr. Andreas Seifert, CIC nanoGUNE

SHORT DESCRIPTION OF THE GROUP: The Nanoengineering group focuses on research at the interface between fundamental nanoscience and applied engineering, in particular in the area of biomedical microsystems. The aim is to bridge the gap between physical sciences and industrial as well as clinical applications by introducing nanotechnology to finally gain added value for novel medical microsystems and mesoscopic devices.

TIMETABLE: 9:00-13:00, 15:00-17:00

COMMENTS: Internship duration from 1.5 to 2 months (to be discussed). Applicants should send an email to jm.pitarke@nanogune.eu including their academic record.

More info: <http://www.nanogune.eu/summer-internship>

Deadline for applications: 5 February 2017

SUITABLE FOR: chemists, physicists, engineers